

# USG Specifications

The specifications apply when the USG is powered on for at least 30 minutes under +20°C to +30°C.

## USG-LF44

Frequency Range	34.5 MHz to 4.4 GHz	
Output Power	-30 dBm to 0 dBm in 1 dB steps	
Internal Reference Frequency	25 MHz , aging $\pm 1$ ppm at first year	
Frequency Accuracy (0 dBm Output Level)	$\pm 100$ Hz at 100 MHz	
Frequency Resolution	10 kHz	
Output Isolation	$\leq -75$ dBc , Output Control	On / Off
Mode Control	Fixed Frequency / Single Sweep / CW Sweep / Hopping/Power Sweep	
Step Dwell	$\leq 1000$ ms in 1* ms steps	
Frequency Offset	-50 kHz to 50 kHz in 10 kHz steps	
Output Flatness	-1dBm~3.5dBm typical (at 0 dBm Output)	
Phase noise	$< -97$ dBc/Hz	10 kHz offset @ 1.0 GHz, typical -100 dBc/Hz
	$< -107$ dBc/Hz	100 kHz offset @ 1.0 GHz, typical -110dBc/Hz
2nd Harmonics	$\leq -15$ dBc, typical	0 dB Attenuation 34.5 MHz to 2.0 GHz, fundamental
	$\leq -10$ dBc, typical	2.0 GHz to 3.0 GHz, fundamental
	$\leq -25$ dBc, typical	3.0 GHz to 4.4 GHz, fundamental
3rd Harmonics	$\leq -5$ dBc, typical	0 dB Attenuation 34.5 MHz to 2.0 GHz, fundamental
	$\leq -20$ dBc, typical	2.0 GHz to 3.0 GHz, fundamental
	$\leq -40$ dBc, typical	3.0 GHz to 4.4 GHz, fundamental
Spurious related to Resolution settings	(Single Point Mode) Spurious related to the fundamental output	

$\leq -30$  dBc, typical       $\leq -65$  dBc, typical      Resolution  $\geq 1$  MHz  
 Resolution  $< 1$  MHz  
                                   $\leq -60$  dBc, typical

**USG-0103**

Frequency Range	100 MHz to 300 MHz	
Output Power	-30 dBm to 0 dBm ,in 1 dB steps	
Internal Reference	25 MHz aging $\pm 1$ ppm at first year	
Frequency Accuracy	$\pm 100$ Hz at 100MHz, 0 dBm Output	
Frequency Resolution	10 kHz	
Output Isolation	$\leq -75$ dBc Output Control On / Off	
Mode Control	Fixed Frequency / Single Sweep / CW Sweep / Hopping/power sweep	
Step Dwell	$\leq 1000$ ms in 1* ms steps	
Frequency Offset	-50 kHz to 50 kHz in 10 kHz steps	
Output Flatness ( typical )	-1 dBm~-2dbm,	
Phase noise	$< -100$ dBc/Hz, typical	10 kHz offset @ 200 MHz
	$< -110$ dBc/Hz	100 kHz offset @ 200 MHz
2nd Harmonics	$\leq -45$ dBc, typical	0 dB Attenuation > 100 MHz, fundamental
3rd Harmonics	$\leq -7$ dBc, typical $\leq -35$ dBc, typical	0 dB Attenuation $\leq 150$ MHz, fundamental > 150 MHz, fundamental
Spurious related to Resolution settings (Single Point Mode)	$\leq -30$ dBc, typical $\leq -65$ dBc, typical	Resolution $< 1$ MHz Resolution $\geq 1$ MHz
Spurious related to the fundamental output	$\leq -60$ dBc, typical	

## USG-0818

Frequency Range	800 MHz to 1.8 GHz	
Output Power	-30 dBm to 0 dBm in 1 dB steps	
Internal Reference	25 MHz aging $\pm 1$ ppm at first year	
Frequency Accuracy	$\pm 800$ Hz at 800MHz, 0 dBm Output	
Frequency_Resolution	10 kHz	
Output Control	On / Off	
On / Off Isolation	$\leq -75$ dBc	
Mode Control	Fixed Frequency / Single Sweep / CW Sweep / Hopping/power sweep	
Step Dwell	$\leq 1000$ ms in 1* ms steps	
Frequency Offset	-50 kHz to 50 kHz in 10 kHz steps	
Accuracy	typical	
Output Flatness	-1dBm~-0.5dBm (0 dBm output Level)	
Phase noise	$< -97$ dBc/Hz	10 kHz offset @ 1.3 GHz
	$< -102$ dBc/Hz	100 kHz offset @ 1.3 GHz
2nd Harmonics	0 dB Attenuation	
	$\leq -25$ dBc, typical	>800 MHz, fundamental
3rd Harmonics	0 dB Attenuation	
	$\leq -25$ dBc, typical	$\leq 900$ MHz, fundamental
	$\leq -35$ dBc, typical	>900 MHz, fundamental
Spurious related to Resolution settings (Single Point Mode) Spurious related to the fundamental output		
$\leq -30$ dBc, typical	Resolution $< 1$ MHz	
$\leq -65$ dBc, typical	Resolution $\geq 1$ MHz	
Spurious related to the fundamental output		
$\leq -65$ dBc, typical		

## USG-2030

Frequency Range	2.0 GHz to 3.0 GHz
Output Power	-30 dBm to 0 dBm , in 1 dB steps
Internal Reference	25 MHz aging $\pm 1$ ppm at first year
Frequency Accuracy	$\pm 2$ kHz at 2 GHz, 0 dBm Output
Frequency Resolution	10 kHz
Output Control	On / Off
On / Off Isolation	$\leq -75$ dBc
Mode Control	Fixed Frequency / Single Sweep / CW Sweep / Hopping/Power Sweep
Step Dwell	$\leq 1000$ ms in 1* ms steps
Frequency Offset	-50 kHz to 50 kHz in 10 kHz steps

### Accuracy

Output Flatness	$\pm 1$ dB, ref. to	at 0 dBm Output
	2500MHz	
Phase noise	$< -93$ dBc/Hz	10 kHz offset @ 2.5 GHz
	$< -100$ dBc/Hz	100 kHz offset @ 2.5 GHz
2nd Harmonics	$\leq -30$ dBc, typical	0 dB Attenuation 2.0 GHz to 3.0 GHz, fundamental
3rd Harmonics	$\leq -45$ dBc, typical	0 dB Attenuation 2.0 GHz to 3.0 GHz, fundamental
Spurious related to Resolution settings (Single Point Mode)	$\leq -30$ dBc, typical	Resolution $< 1$ MHz
	$\leq -65$ dBc, typical	Resolution $\geq 1$ MHz
Spurious related to the fundamental output	$\leq -65$ dBc, typical	

## USG-3044

Frequency Range	3.0 GHz to 4.4 GHz	
Output Power	-30 dBm to 0 dBm in 1 dB steps	
Internal Reference	25 MHz aging $\pm 1$ ppm at first year	
Frequency Accuracy	$\pm 3$ kHz at 3 GHz, 0 dBm Output	
Resolution	10 kHz	
Output Control	On / Off	
On / Off Isolation	$\leq -75$ dBc	
Mode Control	Fixed Frequency / Single Sweep / CW Sweep / Hopping/Power Sweep	
Step Dwell	$\leq 1000$ ms in 1* ms steps	
Frequency Offset	-50 kHz to 50 kHz in 10 kHz steps	
<b>Accuracy</b>		
Output Flatness	$\pm 2$ dB, ref. to 0 dBm Output	
Phase noise	$< -88$ dBc/Hz	10 kHz offset @ 3.7 GHz
	$< -94$ dBc/Hz	100 kHz offset @ 3.7 GHz
2nd Harmonics	0 dB Attenuation	3.0 GHz to 4.4 GHz, fundamental
	$\leq -25$ dBc, typical	
3rd Harmonics	0 dB Attenuation	3.0 GHz to 4.4 GHz, fundamental
	$\leq -40$ dBc, typical	
Spurious related to Resolution settings (Single Point Mode)	$\leq -30$ dBc, typical	Resolution $< 1$ MHz
	$\leq -65$ dBc, typical	Resolution $\geq 1$ MHz
Spurious related to the fundamental output	$\leq -65$ dBc, typical	

\*: Minimum step depends on the computer being used. This min. step will be automatically adjusted by the PC software. 1ms is achieved on a faster system.

## Common Specifications

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### Software for PC:

a. Primary RF supports operating system: Windows 2000/XP/Vista/7/8

b. Java USG Control Panel: Windows 2000/XP/Vista/7/8 Linux/OS X

### Software for mobile device:

For Android 4.0 and higher with OTG\*

Interface USB 2.0

USB Connector Type Mini-B

Supply Voltage 5V nominal

RF Connector Type N-type male

Impedance 50 ohm nominal

Output VSWR < 1.5:1 ,Output level @ -30dBm

Max. DC voltage +/-25VDC

Max. Reverse Power +30dBm

\*Warning: Some Android devices with OTG support cannot run the USG app due to the OTG driver modifications by vendors.